

**CONTINUOUS SLURRY  
POLYMERIZATION PROCESS AND APPARATUS**

**ABSTRACT**

5 A process/apparatus is disclosed for continuously separating a liquid medium comprising diluent and unreacted monomers from a polymerization effluent comprising diluent, unreacted monomers and polymer solids, comprising a continuous discharge of the polymerization effluent from a slurry reactor  
10 through a discharge valve and transfer conduit into a first intermediate pressure flash tank with a conical bottom defined by substantially straight sides inclined at an angle to that of horizontal equal to or greater than the angle of slide of the slurry/polymer solids and an exit seal chamber of such diameter (d) and length (l) as to maintain a desired volume of concentrated polymer solids/slurry in the exit  
15 seal chamber such as to form a pressure seal while continuously discharging a plug flow of concentrated polymer solids/slurry bottom product of the first flash tank from the exit seal chamber through a seal chamber exit reducer with inclined sides defined by substantially straight sides inclined at an angle to that of horizontal equal to or greater than the angle of slide of the polymer solids which  
20 remain after removal of about 50 to 100% of the inert diluent therefrom to a second flash tank at a lower pressure.